Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] A power factor correction circuit having its input connected to an input voltage source and its output connected to an output circuit consisting of at least one filter capacitor and a load and comprising at least one power switch being turned on and off by a control circuit so that the input voltage is connected across at least across one inductor when the said power switch is on and at least one rectifier that connects the said inductor between the said input voltage source and the said output circuit so the inductor current flows out from the said input voltage source and into the said output circuit when the said power switch is off, the said control circuit modulating the on and off intervals of the said power switch so the momentary input current of the said converter is directly proportional to both the momentary value of the input voltage source of the said converter and to the momentary value of the current absorbed by the said load, the said control circuit comprising:
-A SR flip-flop that in its set state turns the said power switch on
-An integrator
-A clock generator that produces a fixed frequency train

of narrow pulses for resetting the said flip-flop and an integrator

-A saw tooth voltage generated by the said integrator by integrating a signal proportional to the current absorbed by the said load, the said integrator being reset by the pulses from the said clock generator so the amplitude of the said saw tooth voltage is proportional to the current of the said load and inversely proportional to the said frequency of the clock pulses

-A comparator that compares the said the saw tooth voltage to a signal proportional to the current delivered to the said output circuit, the said comparator setting the said SR flip-flop when the value of the current delivered from the said inductor to the said output circuit drops below the value of the said saw tooth voltage.

[c2] A power factor correction circuit having its input connected to an input voltage source and its output connected to an output circuit consisting of at least one filter capacitor and a load and comprising at least one power switch being turned on and off by a control circuit so that the input voltage is connected across at least across one inductor when the said power switch is on and at least one rectifier that connects the said inductor between the said input voltage source and the said output circuit so the inductor current flows out from the

said input voltage source and into the said output circuit when the said power switch is off, the said control circuit modulating the on and off intervals of the said power switch the on and off intervals of the said power switch so the momentary input current of the said converter is directly proportional to both the momentary value of the said input voltage source of the said converter and to the momentary value of the current absorbed by the said load and is a independent of the average or the RMS value of the input voltage of the said converter, the said control circuit comprising:

-A SR flip-flop that in its set state turns the said power switch on

-An integrator

-A clock generator that produces a train of narrow pulses for resetting the said flip-flop and the said integrator, the frequency of the said pulses being proportional to the half wave average or the RMS value of the input voltage of the converter

-A saw tooth voltage generated by the said integrator by integrating a signal proportional to the current absorbed by the said load, the said integrator being reset by the pulses from the said clock generator so the amplitude of the saw tooth voltage is proportional to the current of the said load and inversely proportional to the said frequency of the clock pulses

-A comparator that compares the said the saw tooth voltage to a signal proportional to the current delivered by the converter to the said output circuit, the said comparator setting the said SR flip-flop when the value of the current delivered from the said inductor to the said output circuit drops below the value of the said saw tooth voltage.

[c3] A power factor correction circuit having its input connected to an input voltage source and its output connected to an output circuit consisting of at least one filter capacitor and a load and comprising at least one power switch being turned on and off by a control circuit so that the input voltage is connected across at least across one inductor when the said power switch is on and at least one rectifier that connects the said inductor between the said input voltage source and the said output circuit so the inductor current flows out from the said input voltage source and into the said output circuit when the said power switch is off, the said control circuit modulating the on and off intervals of the said power switch the on and off intervals of the said power switch so the momentary input current of the said converter is directly proportional to both the momentary value of the input voltage source of the said converter and to the momentary value of the current absorbed by the said

load and is inversely proportional to the average or the RMS value of the input voltage of the said converter, the said control circuit comprising:

-A SR flip-flop that in its Set state turns the said power switch on

-An integrator

-A clock generator that produces a train of narrow pulses for resetting the said flip-flop and said integrator, the frequency of the said pulses being proportional to the half wave average or the RMS value of the input voltage of the converter.

-A saw tooth voltage generated by the said integrator by integrating a signal directly proportional to the current absorbed by the said load and inversely proportional to the average or the RMS value of the input voltage of the said converter, the said integrator being reset by the pulses from the said clock generator so the amplitude of the saw tooth voltage is proportional to the current of the said load and inversely proportional to the said frequency of the clock pulses

-A comparator that compares the said the saw tooth voltage to a signal proportional to the current delivered to the said output circuit, the said comparator setting the said SR flip-flop when the value of the current delivered from the said inductor to the output circuit drops below the value of the said saw tooth voltage.

[c4] A power factor correction circuit having its input connected to an input voltage source and its output connected to an output circuit consisting of at least one filter capacitor and a load and comprising at least one power switch being turned on and off by a control circuit so that the input voltage is connected across at least across one inductor when the said power switch is on and at least one rectifier that connects the said inductor between the said input voltage source and the said output circuit so the inductor current flows out from the said input voltage source and into the said output circuit when the said power switch is off, the said control circuit modulating the on and off intervals of the said power switch so the momentary input current of the said converter is directly proportional to both the momentary value of the input voltage source of the said converter and to the momentary value of the current absorbed by the said load, the said control circuit comprising:

-A SR flip-flop that in its set state turns the said power switch on

-An integrator

-A clock generator that produces a fixed frequency train of narrow pulses for resetting the said flip-flop and the said integrator

-A saw tooth voltage generated by the said integrator by

integrating a signal proportional to the current absorbed by the said load and inversely proportional to the square of the average or the RMS value of the input voltage of the said converter, the said integrator being reset by the pulses from the said clock generator so the amplitude of the said saw tooth voltage is proportional to the current of the said load and inversely proportional to the said frequency of the clock pulses and inversely proportional to the square of the average or the RMS value of the input voltage of the said converter

-A comparator that compares the said the saw tooth voltage to a signal proportional to the current delivered to the said output circuit, the said comparator setting the said SR flip-flop when the value of the current delivered from the said inductor to the said output circuit drops below the value of the said saw tooth voltage.